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CIA lowers Soviet nuclear test estimates

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WASHINGTON - The Central Intelligence Agency decided recently to lower by about 20 percent the seismic formula used to estimate the yields of Soviet underground nuclear tests, according to administration officials. The result is that some Russian tests once thought to have violated the 150-kiloton ceiling established by the unratified Threshold Test Ban treaty of 1974 are now

believed to have been proper.

But, officials say, even under the new CIA-approved formula, anywhere from six to 20 tests are still believed to have been likely violations.

The decision to change the formula, taken by William Casey, the director of central intelligence, after a split vote in the intelligence community, was based on three separate studies but is being criticized within the bureaucracy by some senior officials of the De-

fense Department and the Arms Control and Disarmament Agency. The sources said President Reagan recently ordered a new interagency study to "clean up this mess" by considering nonseismic as well as seismic methods of improving the estimating process.

The issue has potential political implications because the United States continues to insist it needs an agreement on on-site monitoring of nuclear tests before submitting to the Senate for ratifi-

cation both the 1974 treaty and the companion Peaceful Nuclear Explosions treaty of 1976.

Officials say the Soviet demand for a total nuclear test ban and a US counter-suggestion that a step be taken first on the two earlier treaties are expected to be on the agenda when Soviet Ambassador Anatoli Dobrynin returns to Washington for farewell talks with the president and Secretary of State George P. Shultz.

Dobrynin is expected to return Friday for about a week before going back to Moscow to take up his new foreign policy duties in the Secretariat of the powerful Central Committee. It is understood. He is also expected to fix a date, either in July or more likely December, for a Washington summit meeting between Reagan and Mikhail S. Gorbachev, the Soviet leader, and to confirm whether Foreign Minister Eduard Shevardnadze is prepared for another round of talks with Shultz here this month.

The yield of Soviet underground nuclear tests has been a matter of heated dispute for more than a decade. American seismological estimates, which are an extrapolation from US experiences at the Nevada test site, have been lowered three or four times since 1974 - by a total of 60 percent - as seismologists have refined their calculations.

Because Americans can't monitor the tests on-site, they estimate the size of the Soviet blast based on underground shock waves and surface waves, compare these to waves produced by US tests in Nevada and reach a conclusion about how many kilotons the blast was.

But critics of this approach have pointed out that extrapolations based on surface and sub-surface readings from the soft sediment in Nevada have not yielded the same results when applied to tests in the hard rock of Soviet test sites.

This is a major reason, they contend, that the administration has called for calibration measurements at Soviet test centers,

with the Russians having the same access at US sites. Reagan recently offered to have Soviet specialists come to Nevada to try out a new yield monitoring device during a test shot late this month.

Moscow has declined, saying it is not interested in monitoring a continuation of tests but in joining a total moratorium.

Sources in several agencies provided the following account of the internal policy debate:

When Casey, more than a year ago, notified officials he was prepared to lower the formula for estimating test yields once again, internal protests led to the convening of three special panels: one by the Air Force Technical Analysis Center, another by the Defense Advanced Research Projects Agency and a third by the Defense Intelligence Agency.

The first two panels recommended a downward revision, as urged by Casey. The DIA panel, while concurring in the recommendation because seismic science is more advanced than alternative approaches, called for more research into nonseismic analysis, such as aerial photos of earth cratering caused by underground explosions.

Casey then convened the Joint Atomic Energy Intelligence Committee, consisting of intelligence specialists from the CIA, the DIA, the National Security Agency, the State Department's Bureau of Intelligence and Research, the Department of Energy and the intelligence arms of the Army, Navy and Air Force. By a vote of 5 to 3, the committee voted for the downward revision. It was after that result that the White House ordered a new interagency study to come up with a fresh look.